

**WHAT IS CLAIMED IS:**

1. A surge protection device for protecting equipment from impulse surges, said device comprising a high frequency line, and a first decoupling filter formed as a  $\lambda/4$  section and a gas arrestor, sequentially connected to the high frequency line, said gas arrestor being connected between the first decoupling filter and the ground, wherein said device further comprises:

a low frequency line and a second decoupling filter connected in series between an output terminal, through which a signal flows into a circuit, and a contact point between the first decoupling filter and the gas arrestor, said low frequency line including a low voltage limiter and a low pass filter; and a T-shaped high pass filter connected to the high frequency line.

2. The surge protection device according to claim 1, wherein the low voltage limiter includes a two-directional diode whose breakdown voltage is equal to a supply voltage to be provided to a circuit connected to the output terminal.

3. The surge protection device according to claim 1, wherein the low pass filter in the low frequency line is able to withstand voltage of surges occurring due to breakdown of the gas arrestor.

4. The surge protection device according to claim 1, wherein the high frequency line comprises a band pass filter.

5. The surge protection device according to claim 4, wherein the band pass

filter comprises:

first and second strips, first and second capacitors and a first inductor  
disposed between the input and out

put terminals.

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6. The surge protection device according to claim 5, wherein each of the first  
and second strips comprises a 34 mm thick foil strip.

7. The surge protection device according to claim 5, wherein one end of the  
10 first inductor is connected to the first and second strips and an opposing end of the  
conductor is connected to ground.

8. The surge protection device according to claim 1, wherein the impulse  
surge is between 100 and 200 volts.

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9. The surge protection device according to claim 1, wherein the low  
frequency line further comprises:  
third and fourth capacitors and second and third inductors.

10. The surge protection device according to claim 1, wherein an inductance  
20 of the second inductor  
selectively limits an input current.

11. The surge protection device according to claim 2, wherein the circuit  
25 connected to the output terminal  
comprises an antenna.

12 A surge protection device having a high frequency line, a gas arrestor  
and a first decoupling filter

disposed between an input terminal and an output terminal, said surge protection  
5 device being adapted to protect a communication device from a high voltage, high  
frequency signal and from a high voltage low frequency signal, said surge protection  
device, comprising:

a low frequency line, adapted to divert a high voltage, high frequency signal  
from said high frequency line when said high voltage, high frequency signal is  
10 applied to said input terminal; and

a second decoupling filter, adapted to filter said high voltage, low frequency  
signal from said low frequency line.

13. The surge protection device according to claim 12, wherein said low  
15 frequency line comprises a low  
pass filter.

14. The surge protection device according to claim 12, wherein said low  
frequency line comprises a  
20 first capacitor, a second capacitor, a first inductor and a second inductor, and a  
bidirectional diode.

15. The surge protection device according to claim 12, wherein said  
bidirectional diode selectively  
25 providing an input signal to ground or to said second decoupling filter.

16. The surge protection device according to claim 15, wherein said input signal is between 100 and 20  
0 volts.

5 17. The surge protection device according to claim 16, wherein said input signal is an unwanted impulse signal.

18. A method of providing surge protection for a communication system,  
said method comprising:  
10 detecting a presence of an impulse signal;  
providing said impulse signal to a low frequency line if said impulse signal comprises a high voltage, low  
frequency signal; and  
providing said impulse signal to a high frequency line if said impulse signal  
15 comprises a high voltage, high  
frequency signal.

19. The method of claim 18, wherein the high frequency line includes a high  
pass filter and the low  
20 frequency line includes a low pass filter.

20. The method of claim 18, wherein the low pass filter includes a bi-directional diode having a breakdown voltage equal to a supply voltage of a circuit to be protected.